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REMARKS

Reconsideration of the rejections set forth in the Office Action is respectfully requested. By this Amendment, claims 1, 10, 18, and 26 have been amended. Currently, claims 1-28 are pending in this application.

Objection to claims 10 and 18

The Examiner objected to claims 10 and 18. Applicants have amended independent claims 1, 10, 18, and 26 to use the term "accessing" instead of locating. This amendment is not intended to narrow the claims but rather to cause the claims to be internally consistent. Accordingly, no change in scope is intended in connection with this amendment. In view of this amendment, applicants respectfully request that the objection be withdrawn.

Rejection of claims 1-6, 8-15, 18-23, and 25-28 under 35 USC 102 over Shaughnessy

Claims 1-6, 8-15, 18-23, and 25-28 were rejected under 35 USC 102 as anticipated by Shaughnessy, et al. (U.S. Patent No. 6,141,347). This rejection is respectfully traversed in view of the following arguments.

Multicast trees are commonly established to distribute information to multicast participants in an efficient manner. As noted in the background of the invention, there are several routing protocols that may be used to establish a multicast tree, two of which are Protocol Independent Multicast (PIM) and Distance Vector Multicast Routing Protocol (DVMRP). (See Specification at page 2, lines 4-6). Once the multicast tree has been established, information may be transmitted over the multicast tree. Since not every network device that is connected to the multicast tree may wish to participate in every multicast, or may not be authorized to participate in the multicast, a separate set of protocols have been developed to control membership in the multicast. One common protocol that is used to control membership in a multicast is Internet Group Management Protocol (IGMP). Thus, to summarize, multicast routing protocols such as DVMRP and PIM are used establish the multicast trees or paths through the network, and the ability to participate in multicasts taking place over the trees is controlled by IGMP or a similar membership control protocol.

After a multicast tree has been created using a particular routing protocol, it may be necessary to go back to read the routing information associated with the tree. For example, a

network management application may be configured to troubleshoot a multicast tree by reading the multicast routing information associated with the tree.

Generally, from a routing perspective, a particular application will generally use only one of the several developed multicast routing protocols to create a multicast tree. Once a multicast tree has been established using a multicast routing protocol, the multicast tree may be read by an application that is configured to use the same routing protocol that was used to establish the multicast tree. (Specification at page 2, lines 8-9). However, applications that are configured to read multicast information established using a particular multicast routing protocol have conventionally not been able to read information about multicast trees using a routing protocol other than that particular multicast routing protocol. For example, a network management application configured to troubleshoot DVMRP trees by reading DVMRP multicast routing information would not be able to troubleshoot a multicast tree established using PIM. (See e.g. specification at page 2, lines 9-11).

Applicant discovered that multicast information could be stored in a Management Information Base (MIB) on routers on the network in a protocol neutral format and then retrieved by applications using an available network management protocol, such as Simple Network Management Protocol (SNMP). By storing the routing information in a protocol neutral format, a network management application may read the routing information regardless of what routing protocol was used to establish the multicast tree.

Shaughnessy teaches that multicast groups (referred to by Shaughnessy as "talk groups") may be established and tracked using Internet Group Management Protocol (IGMP). See Shaughnessy at Col. 3, lines 56-62. As is well know in the art and as discussed above, IGMP is used to enable members to add and leave multicast groups, and enables the routers to keep track of which members are associated with which groups. IGMP is thus not a routing protocol, but rather is a protocol that allows multicast groups to be managed on the network.

IGMP works in connection with a multicast routing protocol. The multicast routing protocol allows the routers on the network to establish routes to support forwarding of data across the network of routers. (see Shaughnessy at Col. 3, lines 62-65). Shaughnessy lists several different multicast routing protocols that may be used on the network at Col. 3, line 65 to Col. 4, line 8. Several of the multicast routing protocols listed include CBT, PIM-SM, PIM-DM, MOSPF, and DVMRP. However, Shaughnessy does not teach or suggest that the routing

information from any one of these routing protocols should be stored in any but standard fashion. Thus, it would be expected that the routing information would be stored in a protocol specific format. Rather, Shaughnessy teaches that a standard multicast routing protocol (such as PIM or DVMRP) may be used to establish multicast trees, and that IGMP may be used to control access to multicast groups (talk groups) that are established on the multicast trees.

Shaughnessy's focus is on how to decentralize management of the multicast groups so that centralized tracking of group members is not required. (See Shaughnessy at col. 4, lines 14-18, col. 2, lines 21-26, and col. 2, lines 56-60). The way in which Shaughnessy achieves decentralization is by causing the edge routers or the subscribers to maintain a mapping between the talk group IDs and the multicast IP addresses. (See Shaughnessy at col. 4, lines 22-28 and col. 4, lines 43-44). By allowing the edge routers or the subscribers to maintain a mapping between multicast group ID and the multicast IP address, it is not necessary for this mapping to be stored at a central location.

The mapping between multicast group ID and the multicast IP address is not routing information. Talk group identifications are explained by Shaughnessy at Col. 3, lines 15-18: "The plurality of subscriber units 210-217 are logically arranged into a talk group[s], which talk groups have corresponding talk group identifications..." Thus, talk groups are logical associations of subscriber units. To enable the talk group identifications to have meaning to the underlying network, these talk group IDs are mapped to particular IP addresses.

Applicants respectfully submit that Shaughnessy does not anticipate the claims as currently drafted. For example, independent claim 1 recites "A method of producing a multicast tree for an application configured to use a first multicast routing protocol from existing protocol independent multicast routing information in a network, at least some of the protocol independent multicast routing information having been created from multicast information associated with an application configured to use a second multicast routing protocol..."

Shaughnessy does not teach producing a multicast tree for an application configured to use a first multicast ROUTING protocol from multicast information created by an application configured to use a second multicast ROUTING protocol. Rather, Shaughnessy teaches a distributed mapping of IGMP information to multicast addresses. Since IGMP is not a ROUTING protocol, this does not anticipate the claims as drafted.

The Examiner has addressed each aspect of the preamble of claim 1 in the first paragraph of the rejection. Specifically, the Examiner has asserted that Shaughnessy teaches:

- "a method of producing a multicast tree (a spanning tree for a given multicast group) for an application configured to use a first multicast routing protocol (DVMRP)"
- "from existing protocol independent multicast routing information (Fig. 2, multicast addresses) in a network"
- "at least some of the protocol independent multicast routing information (Fig. 2, talk group IDs) having been created from multicast information associated with an application configured to user a second multicast routing protocol (PIM-DM)."

Applicants respectfully submit that this last point is incorrect. The talk group IDs are not created using PIM-DM but rather are created using IGMP as discussed in greater detail above. Accordingly, applicants respectfully request that the rejection of the claims be withdrawn.

Rejection of claims 7, 16, and 24 under 35 USC 103

Claims 7, 16, and 24 were rejected under 35 USC 103 over Shaughnessy in view of Dobbins (U.S. Patent No. 5,951,649). Claims 7, 16, and 24 are dependent claims and are therefore patentable for substantially the same reasons set forth above in connection with the independent claims.

Conclusion

Applicants respectfully submit that the claims pending in this application are in condition for allowance and respectfully request an action to that effect. If the Examiner believes a telephone interview would further prosecution of this application, the Examiner is respectfully requested to contact the undersigned at the number indicated below.

If any fees are due in connection with this filing, the Commissioner is hereby authorized to charge payment of the fees associated with this communication or credit any overpayment to Deposit Account No. 502246 (Ref. NN-13774).

Respectfully Submitted

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